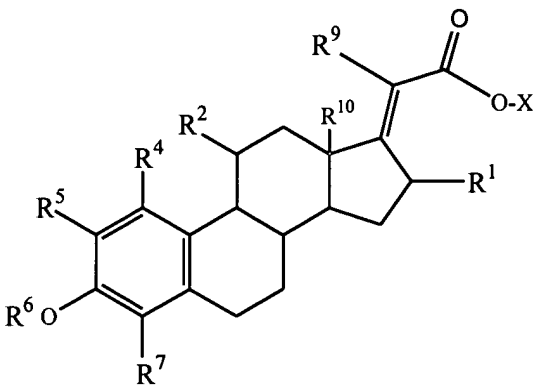
This listing of the claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS

1. **(original)** A compound having the structural formula (I)

(I)



wherein:

X is lower hydrocarbyl;

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

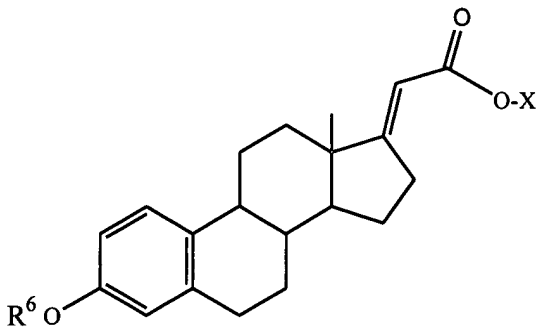
R^4, R^5, R^6, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl;

R^9 is hydrogen or hydrocarbyl; and

R^{10} is methyl or ethyl.

2. **(original)** The compound of claim 1, having the structural formula (II)

(II)



wherein:

X is lower alkyl; and

R^6 is selected from the group consisting of hydrogen and lower alkyl.

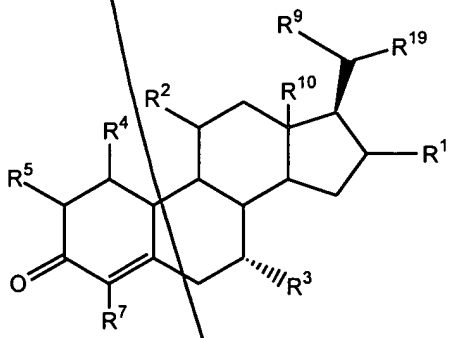
3. **(original)** The compound of claim 2, wherein R^6 is hydrogen.

4. **(original)** The compound of claim 2, wherein R^6 is lower alkyl.

5. **(original)** The compound of claim 4, wherein R^6 is methyl.

6. **(original)** A compound having the structural formula (III)

(III)



wherein:

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

R^3 is selected from the group consisting of hydrogen and hydrocarbyl;

R^4, R^5, and R^7 are independently hydrogen or lower alkyl;

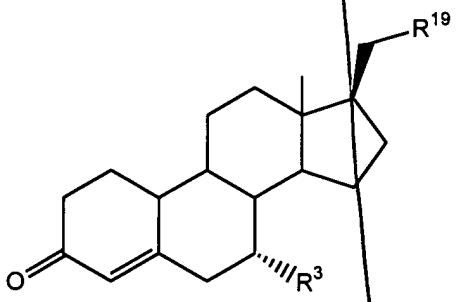
R^9 is hydrogen or hydrocarbyl;

R^{10} is methyl or ethyl; and

R^{19} is hydroxyl, hydroxymethyl, protected hydroxyl, protected hydroxymethyl, activated hydroxyl, or activated hydroxylmethyl.

7. **(original)** The compound of claim 6, having the structural formula (IV)

(IV)



wherein:

R^3 is hydrogen or lower alkyl; and

R^{19} is hydroxyl, hydroxymethyl, -O-acetyl, or -O-tetrahydropyranyl.

8. **(original)** The compound of claim 7, wherein R^3 is hydrogen or methyl, and R^{19} is hydroxymethyl.

9. **(original)** The compound of claim 8, wherein R^3 is hydrogen.

#14

10. **(original)** The compound of claim 8, wherein R^3 is methyl.

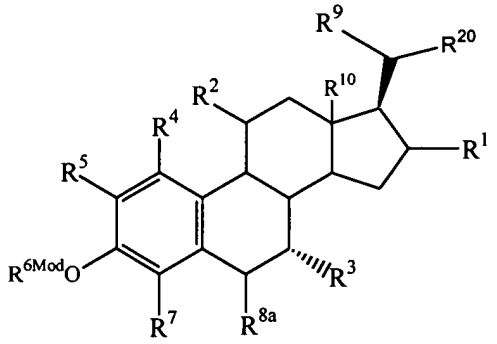
11. **(original)** The compound of claim 7, wherein R^3 is hydrogen or methyl, and R^{19} is hydroxyl.

12. **(original)** The compound of claim 11, wherein R^3 is hydrogen.

13. **(original)** The compound of claim 11, wherein R^3 is methyl.

14. **(currently amended)** A compound having the structural formula (V)

(V)



wherein:

R^1 is hydrogen or $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

R^3 is hydrocarbyl;

R^4, R^5, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl;

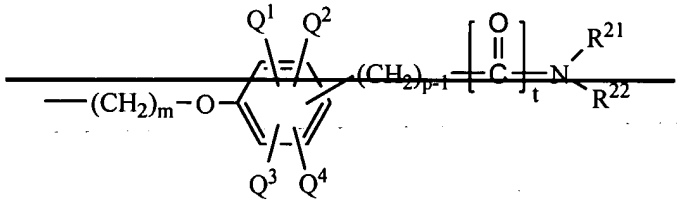
R^{6Mod} is selected from the group consisting of hydrogen, alkyl, acyl, -C(O)-aryl, -C(O)-alkyl, hydroxyl-protecting groups, and hydroxyl-activating groups;

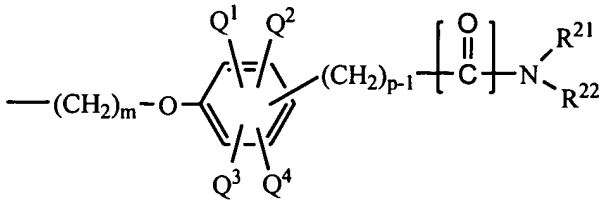
R^{8a} is ~~selected from the group consisting of hydrogen, hydroxyl,~~ oxo ~~, and OR^{18} wherein R^{18} is lower alkyl or lower acyl~~;

R^9 is hydrogen or alkyl;

R^{10} is methyl or ethyl; and

R^{20} is hydroxyl, hydroxymethyl, protected hydroxyl, protected hydroxymethyl, activated hydroxyl, activated hydroxymethyl, or



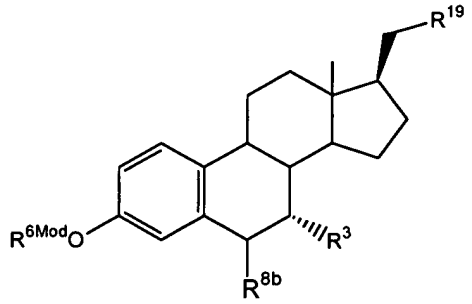


in which m is zero or 1, p is an integer in the range of 1 to 7, ~~t is zero or 1, with the proviso that when R^{8a} is oxo, t is 1, and when R^{8a} is hydrogen, t is zero, and~~ R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino.

2 ~~15~~. **(currently amended)** The compound of claim ~~14~~ 1, having the structural formula (VI)

(VI)



wherein:

R^3 is lower alkyl;

R^{6Mod} is hydrogen or a hydroxyl-protecting group;

R^{8b} is ~~selected from the group consisting of hydrogen, hydroxyl, and~~ oxo; and

R^{19} is hydroxyl, hydroxymethyl, protected hydroxyl, protected hydroxymethyl, activated hydroxyl, or activated hydroxymethyl.

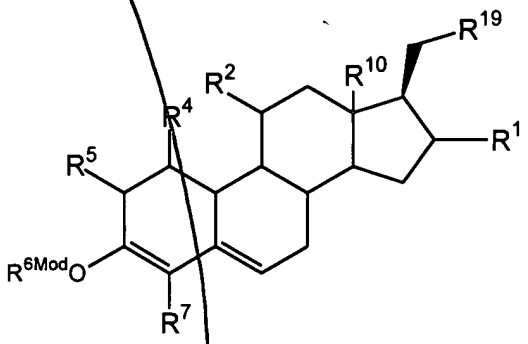
3 ~~16~~. **(previously presented)** The compound of claim ~~15~~ 2, wherein R^3 is methyl, R^{6Mod} is hydrogen or lower alkyl, R^{8b} is oxo, and R^{19} is hydroxyl, hydroxymethyl, -O-acetyl, or -O-tetrahydropyranyl.

4 ~~17~~. **(canceled)**

18. **(previously presented)** The compound of claim ~~16~~ 3, wherein R^{6Mod} is isopropyl.

19. **(original)** A compound having the structural formula (XXVII)

(XXVII)



wherein:

R^1 is hydrogen or $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

R^4, R^5, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl;

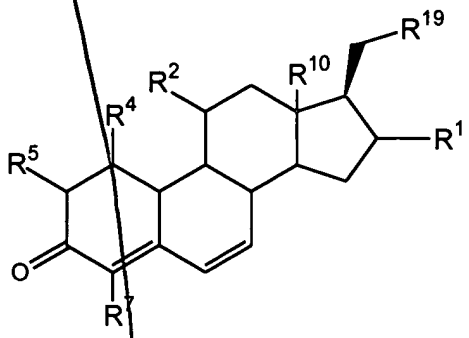
R^{6Mod} is selected from the group consisting of hydrogen, alkyl, acyl, -C(O)-aryl, -C(O)-alkyl, hydroxyl-protecting groups, and hydroxyl-activating groups;

R^{10} is methyl or ethyl; and

R^{19} is hydroxyl, hydroxymethyl, protected hydroxyl, protected hydroxymethyl, activated hydroxyl, or activated hydroxymethyl.

20. **(original)** A compound having the structural formula (XXVIII)

(XXVIII)



wherein:

R^1 is hydrogen or $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

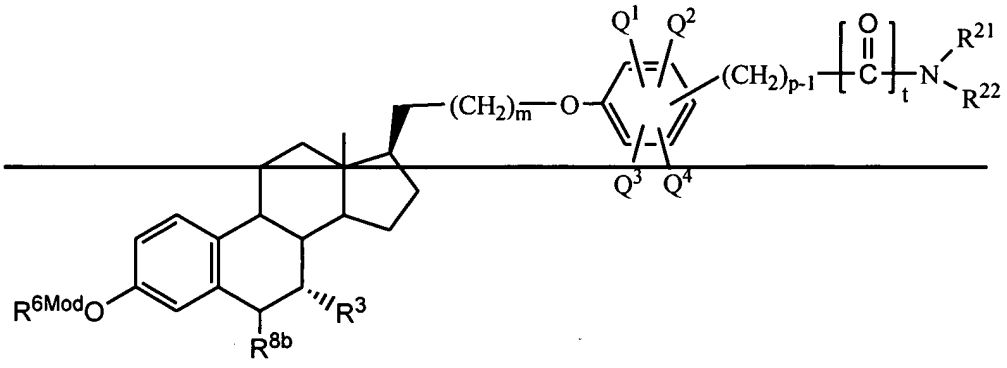
R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

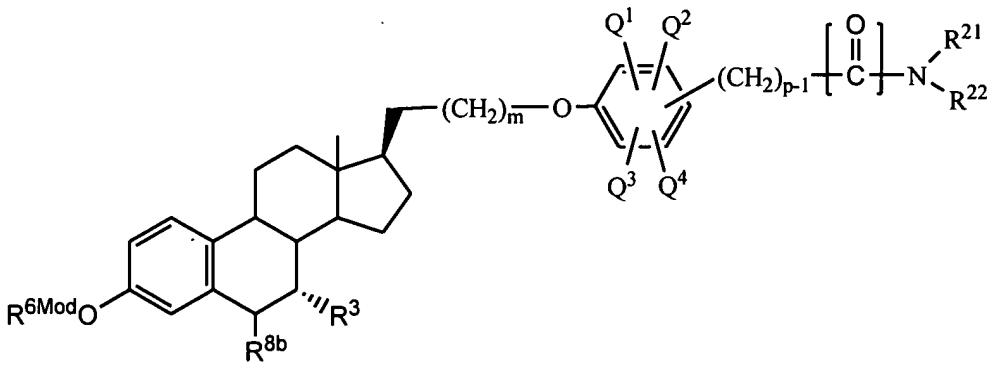
R^4, R^5, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl;

R^{10} is methyl or ethyl; and

R^{19} is hydroxyl, hydroxymethyl, protected hydroxyl, protected hydroxymethyl, activated hydroxyl, or activated hydroxymethyl.

21. **(currently amended)** A compound having the structural formula (VII)



(VII) 

wherein:

R^3 is hydrogen or hydrocarbyl;

R^{6Mod} is selected from the group consisting of hydrogen, alkyl, acyl, -C(O)-aryl, and -C(O)-alkyl, hydroxyl-protecting groups, and hydroxyl-activating groups;

R^{8b} is ~~selected from the group consisting of hydrogen, hydroxyl, and~~ oxo;

m is zero or 1;

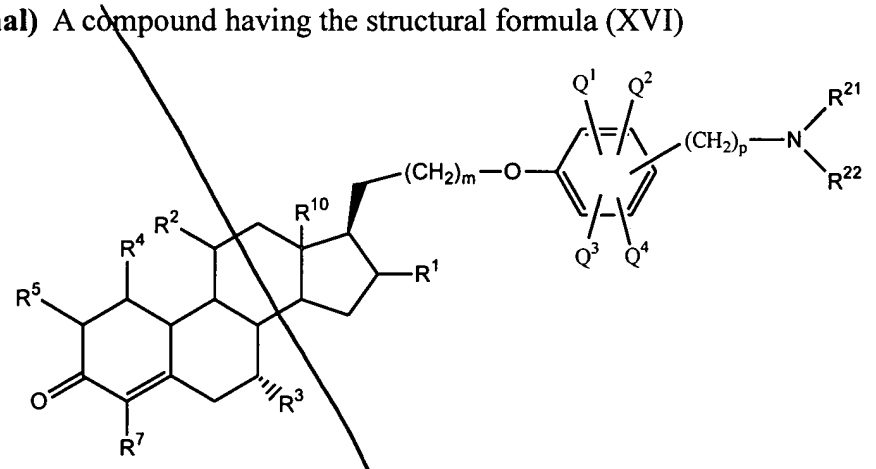
p is an integer in the range of 1 to 7;

~~t is zero or 1, with the proviso that when R^{8b} is oxo, t is 1, and when R^{8b} is hydrogen, t is zero, and;~~

R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino.

22. **(original)** A compound having the structural formula (XVI)

(XVI) 

wherein:

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

R^3 is hydrogen or hydrocarbyl;

R^4 and R^5 are independently selected from the group consisting of hydrogen and lower alkyl;

R^7 is hydrogen or lower alkyl;

R^{10} is methyl or ethyl;

m is zero or 1;

p is an integer in the range of 1 to 7 inclusive;

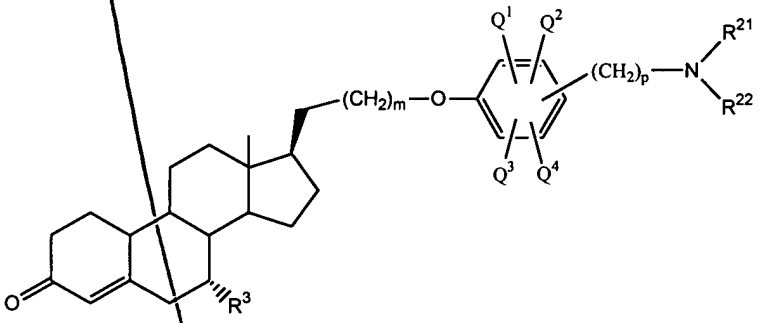
R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino,

or a pharmacologically acceptable acid addition salt thereof.

23. **(original)** The compound of claim 22, having the structural formula (XVII)

(XVII)



wherein:

m is zero or 1;

p is an integer in the range of 1 to 7 inclusive;

R^3 is hydrogen or lower alkyl;

R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino,

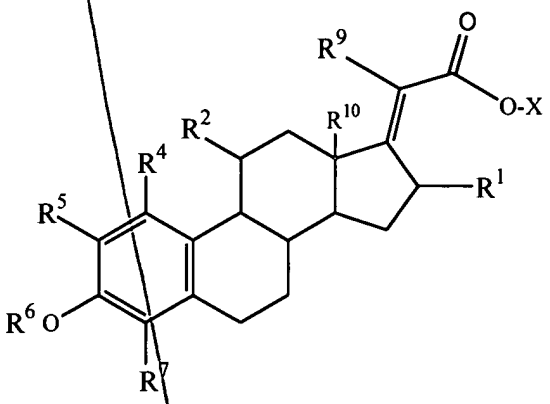
or a pharmacologically acceptable acid addition salt thereof.

24. **(riginal)** The compound of claim 21, wherein R^3 is lower alkyl.

25. **(original)** The compound of claim 22, wherein R^3 is methyl.

26. **(original)** A method for synthesizing 21-hydroxy-19-norpregna-4-en-one and substituted analogs thereof, comprising treating a starting material having the structural formula (I)

(I)



with an alkali metal in the presence of ammonia or an alkylamine, wherein, in formula (I),

X is lower hydrocarbyl;

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

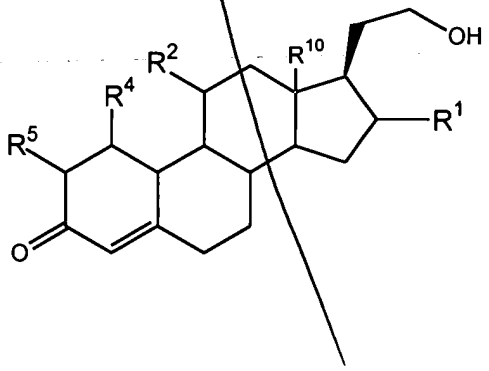
R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, $-OR^{13}$, and $-SR^{13}$ wherein R^{13} is alkyl;

R^4, R^5, R^6, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl;

R^9 is hydrogen or hydrocarbyl; and

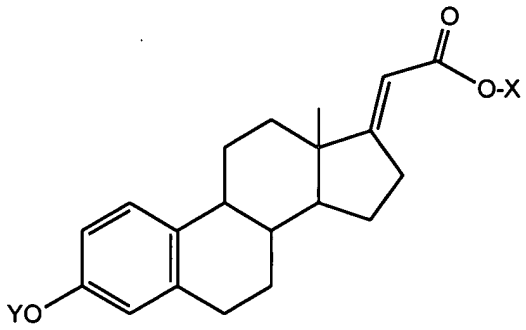
R^{10} is methyl or ethyl, resulting in a reaction product having the structural formula (VIII)

(VIII)



27. **(original)** A method for synthesizing 21-hydroxy-19-norpregna-4-en-3-one, comprising treating (IX)

(IX)

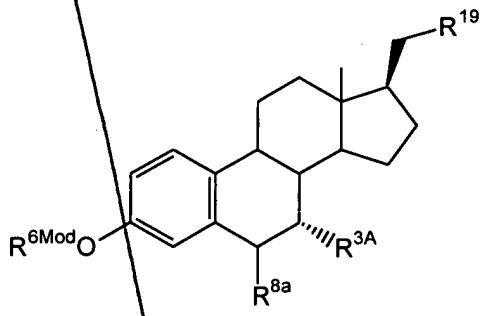


wherein X and Y are independently lower alkyl, with an alkali metal in the presence of ammonia or an alkylamine.

28. **(original)** A method for synthesizing a 7-alkyl-6-keto-1,3,5(10) estratriene, comprising contacting a 19-norpregna-4-en-3-one with gaseous oxygen in the presence of base, followed by reaction of the intermediate so provided with an alkyl halide.

29. **(original)** A method for synthesizing a 7-alkyl-6-keto-1,3,5(10) estratriene having the structural formula (VIa)

(VIa)



wherein:

R^{3A} is lower alkyl;

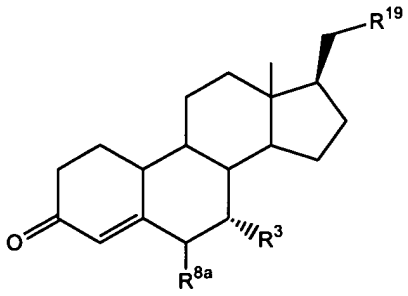
R^{6Mod} is hydrogen or a hydroxyl-protecting group;

R^{8a} is hydrogen or oxo; and

R^{19} is hydroxyl, hydroxymethyl, protected hydroxyl, or protected hydroxymethyl, the method comprising the steps of

(a) contacting the 19-norpregna-4-en-3-one (X)

(X)



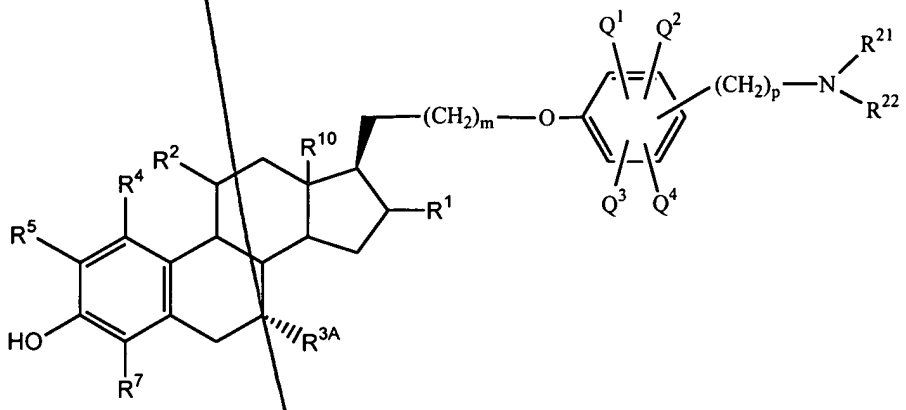
with oxygen in the presence of a base;

(b) protecting the 3-hydroxyl group thus formed with a protecting group, and

(c) treating the 3-hydroxyl-protected intermediate with an alkyl halide.

30. **(original)** A method for synthesizing an anti-estrogenic steroid having the structural formula (XI)

(XI)



wherein:

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl, and when r1 is absent, R^1 is hydrogen or alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, and $-OR^{13}$ wherein R^{13} is alkyl;

R^{3A} is lower alkyl;

R^4, R^5, R^6, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl; and

R^{10} is methyl or ethyl;

m is zero or 1;

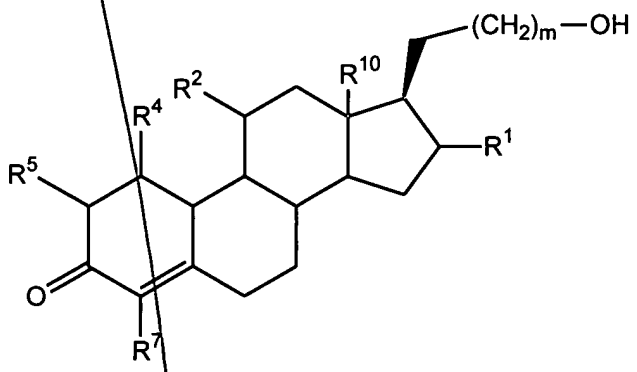
p is an integer in the range of 1 to 7 inclusive;

R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino,

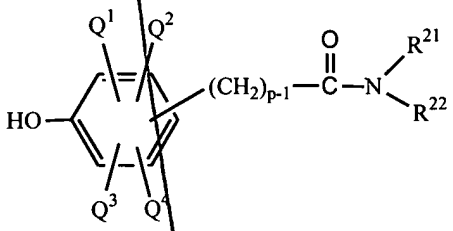
said method comprising:

(a) providing a starting material having the structural formula (XII)

(XII) 

;

(b) converting the -OH group to an -O-LG moiety wherein LG is a leaving group displaceable by nucleophilic attack, and displacing LG by reaction with a hydroxyl-containing compound having the structural formula (XIII)

(XIII) 

;

(c) oxidizing the A ring and providing a 6-keto moiety by exposure to gaseous oxygen in the presence of base;

(d) protecting the 3-hydroxyl group with a protecting group;

(e) contacting the product of step (d) with an alkyl halide, to provide a 7α-alkyl substituent; and

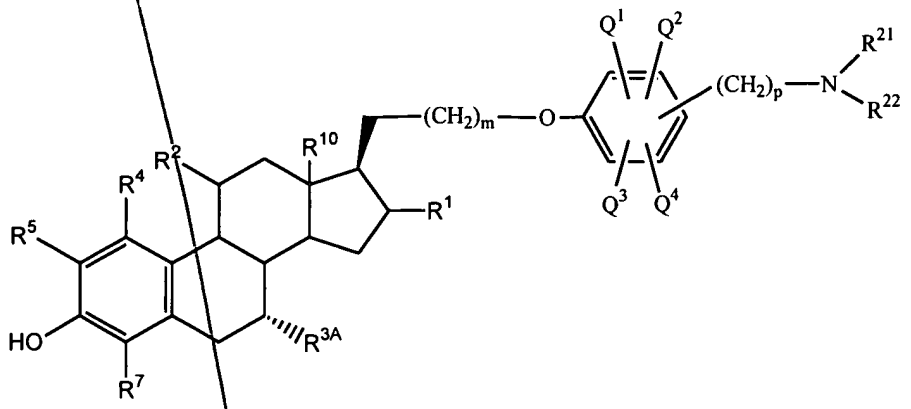
(f) reducing the compound so provided to remove all keto moieties,

with the proviso that steps (c) and (d) may occur prior to or simultaneously with step (b).

31. **(original)** The method of claim 30, further including (g) treating the product of step (f) with an acid to produce an acid addition salt.

32. **(original)** A method for synthesizing an anti-estrogenic steroid having the structural formula (XI)

(XI)



wherein:

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, and $-OR^{13}$ wherein R^{13} is alkyl;

R^{3A} is lower alkyl;

R^4, R^5, R^6 and R^7 are independently selected from the group consisting of hydrogen and lower alkyl; and

R^{10} is methyl or ethyl.

m is zero or 1;

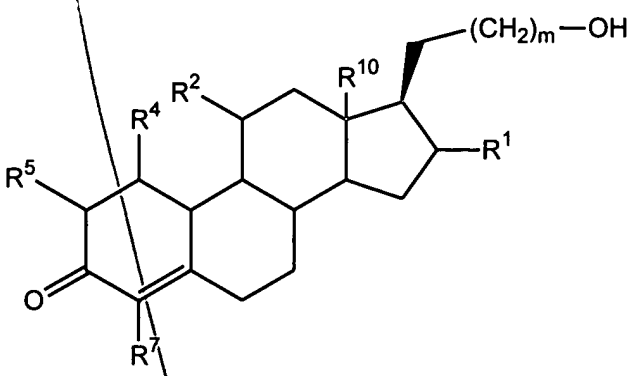
p is an integer in the range of 1 to 7 inclusive;

R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino,

said method comprising:

(a) providing a starting material having the structural formula (XII)

(XII) 

;

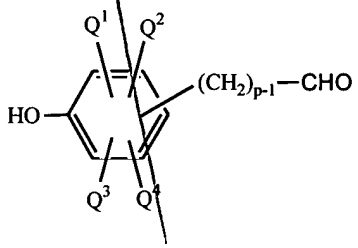
(b) protecting the -OH group and the oxy group with protecting groups, thereby converting the compound into a diene;

(c) deprotecting the oxy group to form a dienone;

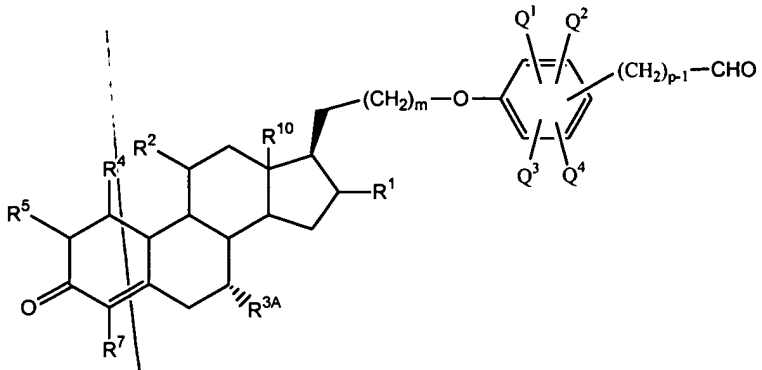
(d) contacting the product of step (b) with an alkyl lithium in the presence of a lithium halide, to provide a 7α-alkyl substituent;

(e) deprotecting the -OH group;

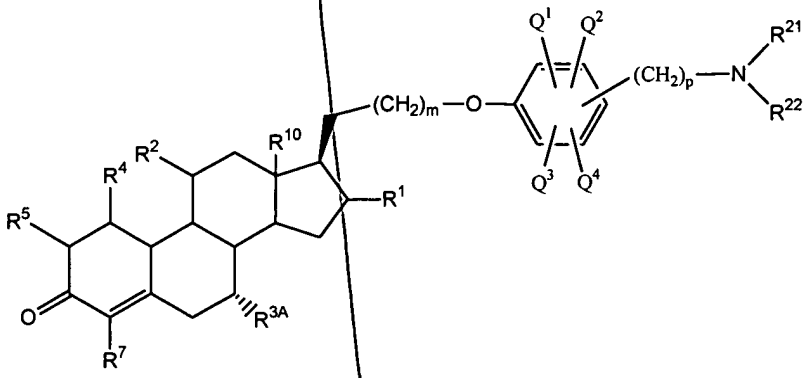
(f) effecting reaction between the -OH group and an aldehyde having the structural formula (XIV)

(XIV) 

to result in an intermediate having the structural formula (XV)

(XV)  ;

(g) treating (XV) with an alkylamine having the structure $HNR^{21}R^{22}$ under reaction conditions effective to produce the amine (XVI)

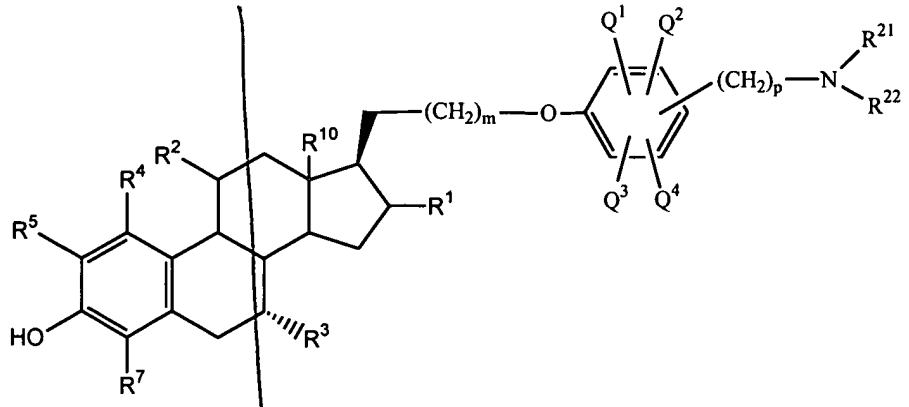
(XVI)  ; and

(h) oxidizing and thereby aromatizing the A ring by reaction with a suitable oxidizing agent or agents.

33. **(original)** The method of claim 32, further including (i) treating the product of step (h) with an acid to produce an acid addition salt.

34. **(original)** A method for synthesizing an anti-estrogenic steroid having the structural formula (XI)

(XI)



wherein:

R^1 is $CR^{11}R^{12}$, wherein R^{11} and R^{12} are hydrogen or lower alkyl, and when r1 is absent, R^1 is hydrogen or alkyl;

R^2 is selected from the group consisting of hydrogen, hydroxyl, alkyl, and $-OR^{13}$ wherein R^{13} is alkyl;

R^{3A} is lower alkyl;

R^4, R^5, R^6, and R^7 are independently selected from the group consisting of hydrogen and lower alkyl; and

R^{10} is methyl or ethyl;

m is zero or 1;

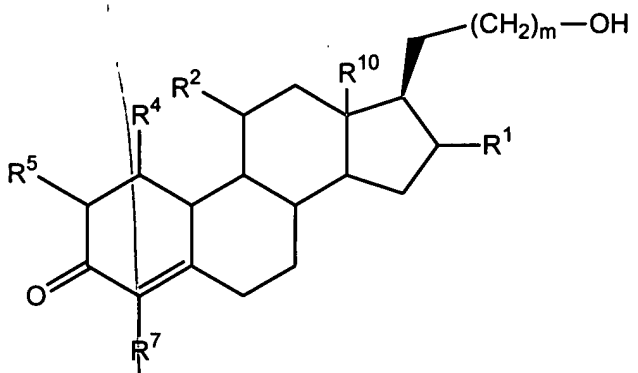
p is an integer in the range of 1 to 7 inclusive;

R^{21} and R^{22} are lower alkyl or are linked together to form a five- or six-membered heterocycloalkyl ring; and

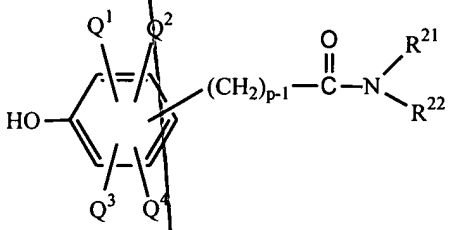
Q^1, Q^2, Q^3, and Q^4 are independently selected from the group consisting of hydrogen, hydroxyl, carboxyl, alkoxy, alkyl, halogen, amino, and alkyl-substituted amino,

said method comprising:

(a) providing a starting material having the structural formula (XII)

(XII)  ;

(b) converting the -OH group to an -O-LG moiety wherein LG is a leaving group displaceable by nucleophilic attack, and displacing LG by reaction with a hydroxyl-containing compound having the structural formula (XIII)

(XIII)  ;

(c) oxidizing the A ring to form a diene and protecting resulting the 3-hydroxyl group with a protecting group;

(d) converting the protected 3-hydroxyl group into an oxo group, thereby forming a dienone;

(e) contacting the product of step (d) with an alkyl lithium in the presence of lithium halide, to provide a 7α-alkyl substituent; and

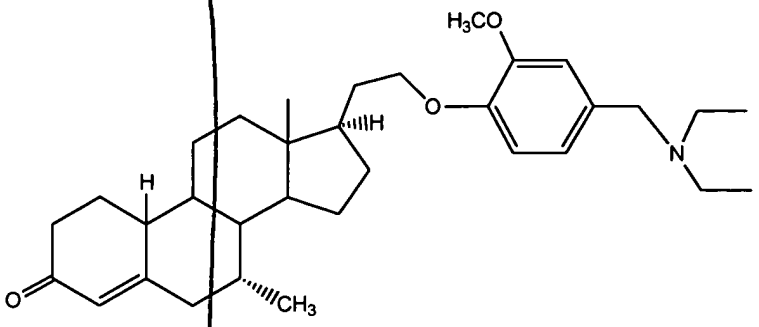
(f) reducing the compound so provided to remove all keto moieties.

35. **(original)** The method of claim 34, further including (g) treating the product of step (f) with an acid to produce an acid addition salt.

36. **(original)** A pharmaceutical composition for administration of a therapeutic agent, comprising a therapeutically effective amount of the compound of claim 20, in combination with a pharmaceutically acceptable carrier.

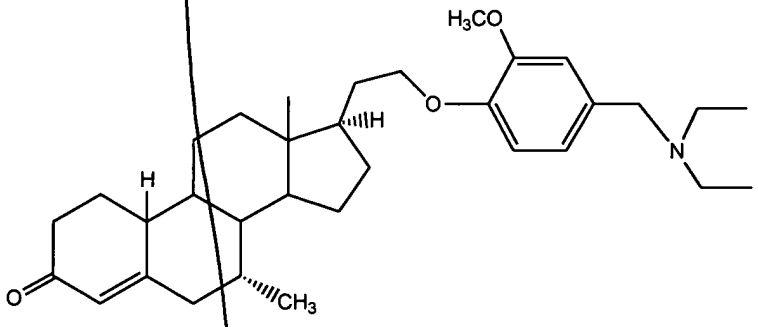
37. **(original)** A pharmaceutical composition for administration of a therapeutic agent, comprising a therapeutically effective amount of the compound of claim 21, in combination with a pharmaceutically acceptable carrier.

38. **(original)** A pharmaceutical composition for administration of a therapeutic agent, comprising a therapeutically effective amount of a compound having the structural formula



or a pharmaceutically acceptable acid addition salt thereof, in combination with a pharmaceutically acceptable carrier.

39. **(original)** A pharmaceutical composition for administration of a therapeutic agent, comprising a therapeutically effective amount of a compound having the structural formula

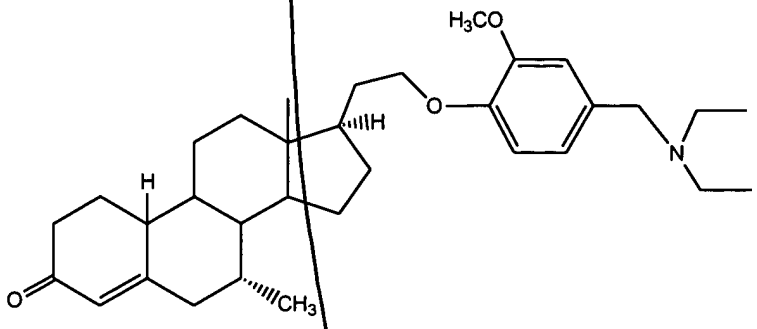


or a pharmaceutically acceptable acid addition salt thereof, in combination with a pharmaceutically acceptable carrier.

40. **(original)** A method for treating a human patient suffering from a prostate disorder, comprising administering to the patient, within the context of an effective dosage regimen, a therapeutically effective amount of the compound of claim 20.

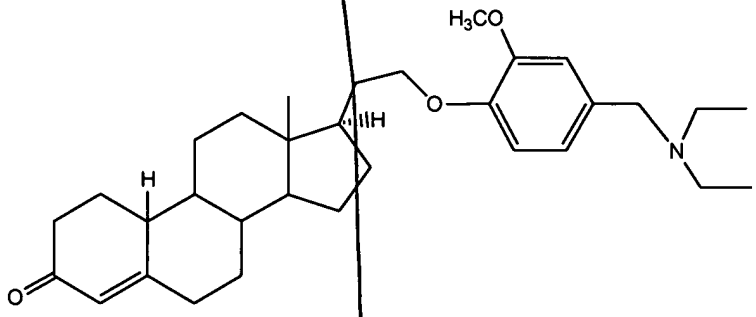
41. **(original)** A method for treating a human patient suffering from a prostate disorder, comprising administering to the patient, within the context of an effective dosage regimen, a therapeutically effective amount of the compound of claim 21.

42. **(original)** A method for treating a human patient suffering from a prostate disorder, comprising administering to the patient, within the context of an effective dosage regimen, a therapeutically effective amount of a compound having the structural formula



or a pharmaceutically acceptable acid addition salt thereof.

43. **(original)** A method for treating a human patient suffering from a prostate disorder, comprising administering to the patient, within the context of an effective dosage regimen, a therapeutically effective amount of a compound having the structural formula



or a pharmaceutically acceptable acid addition salt thereof.

44. **(original)** A method for stereoselectively adding an alkyl moiety to the 7α position of a 6 keto steroid comprising providing a C^{19} or C^{20} tetrehydropyranyl protected hydroxyl moiety on the steroid and reacting the protected steroid with an alkylhalide in the presence of base.